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PII: S0165-1765(18)30267-2
DOI: https://doi.org/10.1016/j.econlet.2018.07.013
Reference: ECOLET 8117

To appear in: *Economics Letters*

Received date : 11 May 2018
Revised date : 3 July 2018
Accepted date : 5 July 2018

Please cite this article as: Ahiabor F.S., James G.A., Kwabi F.O., Siems M.M., Shareholder protection, stock markets and cross-border mergers. *Economics Letters* (2018), https://doi.org/10.1016/j.econlet.2018.07.013

Highlights

- Shareholder protection laws are a significant determinant of stock market development
- Cross-border mergers and acquisitions lead to international convergence in shareholder protection laws
- By distinguishing between "enabling" and "paternalistic" shareholder protection laws, we show that enabling rules drive these results

Shareholder protection, stock markets and cross-border mergers*

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Abstract

This paper is the first one that uses a panel data of different types of shareholder protection in order to examine (i) the effect of such laws on stock market development and (ii) the convergence of shareholder protection laws through cross-border mergers and acquisitions. We find significant results for enabling laws but less so for paternalistic ones.

JEL classification: G32, K22, N20, O16, P50

Keywords: Law and finance; shareholder protection; corporate governance; corporate

* We gratefully acknowledge funding from the ESRC's Rising Powers and Interdependent Futures Research Programme, Project "Law, Development and Finance in Rising Powers", Grant No. ES/J012491/1.

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1. Introduction

A central idea in corporate finance is the principal-agent problem that arises from the separation of ownership and control of the corporation. Legal rules play a vital role in mitigating the principal agency problem by restraining managerial opportunisms. This suggests that laws protecting shareholders play important role in stock market development. La Porta et al (1998) and Djankov et al. (2008) confirm this relationship based on cross-sectional studies of general aggregates quantifying shareholder protection. However, there have also been concerns about the accuracy of these legal data (Spamann, 2010); thus, the following is based on a more advanced index of shareholder protection, developed by the Centre of Business Research (CBR) at the University of Cambridge and available as panel data (Armour et al., 2009; Deakin et al., 2017). Using this data, a prior study found a more pronounced rise in paternalistic than enabling rules on shareholder protection since 1990 (Katelouzou and Siems, 2015). This paper is the first one to econometrically assess the possible relevance of these two type of rules.

2. Shareholder protection and stock market development

The CBR shareholder protection data are available for 30 countries over the period 1990-2013. As shown in Table 1, the following is based on the general aggregate of this index, the aforementioned sub-indices on paternalistic and enabling rules, and a number of control variables.

Insert Table 1 about here

Table 2 reports the base-line result on the relationship between shareholder protection and stock market development estimation using the Arellano and Bond general method of moment estimator. We specify the model using Equation (1).

$$\Delta MGDP_{jt} = a + \beta_1 \Delta MGDP_{jt-1} + \beta_2 \Delta X_{jt-1} + \gamma \Delta Z_{jt-1} + \epsilon_{jt} \quad (1)$$

where $MGDP$ is market capitalization scaled by GDP, ΔX_{jt-1} represents the instrumented electoral process change 1997-2012 ($ELECPROCH$) and Z_{jt-1} represents the control variables following Pagano and Volpin (2008). We report the results together with their standard errors in parentheses.

Insert Table 2 about here

Model 1, 2 and 3 are estimated with shareholder protection aggregate (SPI) aggregate, shareholder protection enabling ($SPIE$) and shareholder protection index paternalistic ($SPIP$) respectively as the main explanatory variables. The coefficient on our main variable of interest, SPI and $SPIE$ display the expected signs and are statistically significant in Models 1 and 2 respectively. This suggests that SPI and $SPIE$ improve stock market development. For instance, a point increase in SPI in Model 1 leads to an increase of 0.43% in stock market development: Additionally, a point increase in $SPIE$ in Model 2 leads to an increase in stock market development by 1.44%. No such significant relationship is found for SPIP.

3. Convergence of shareholder protection laws

Table 3 reports the results on the convergence of shareholder protection laws through cross-border mergers and acquisitions, estimated using an ordinary least square (OLS) estimator. We run the regressions using the following general specification (2).

$$\Delta SPI_{jt} = \alpha + \beta_1 . X_{jt} + \beta_2 . \Delta Ctls_{jt} + \epsilon_{jt} \quad (2)$$

ΔSPI is the change in shareholder protection from 1990 to 2013. One at a time, of country j at time t. X_{jt} is a vector of estimates of *SPI_97, SPIE_97, SPIP_97* and *SPI* regressed one at a time. $Ctls_{jt}$ is a vector of the control variables of country j at time t. Throughout the analysis, we estimate all coefficients based on double-clustered standard errors, the clustering is done at the country and year level (Petersen, 2009). Our main variables of interest are cross-border mergers and acquisitions (*CBMA*) and the interaction term of *CBMA* and shareholder protection index in 1997 (*CBMA*SPI_97*).

Insert Table 3 about here

The results show that *CBMA* positively influences shareholder protection. Interestingly, the coefficient on *CBMA* is only significant for aggregate shareholder protection when an interaction term of *CBMA* and *SPI_1997* is included in the estimation model. On the other hand, the coefficient on *CBMA* for *SPIE* increases in magnitude and significance if the interaction term *CBMA* and shareholder protection in 1997 is included. The positive relationship confirms our hypothesis on convergence by law through convergence by contract and is consistent with the findings of Pagano and Volpin (2006). The result also indicates that the initial level of shareholder protection is significant through its interaction with *CBMA*. The coefficient on the interaction between *CBMA* and initial shareholder protection index in 1997 however, shows a negative relationship with *SPI* index in 2012.

We also measure the relationship between initial shareholder protection index in 1997 and shareholder protection in 2012. The result shows a negative relationship between initial shareholder protection (*SPI_97*) and current shareholder protection index (2012). These results are also statistically significant at the 1% level for all *SPI* measures and are robust to

the inclusion of the proportionality of the electoral system and cross-border mergers and acquisitions. The results indicate that our sample countries have relatively improved on shareholder protection laws over the study period.

4. Conclusion

Our findings shed new light on the law and finance relationship as well as on the issue of international and club convergence in shareholder protection. Using a panel data for 30 countries over the period 1990-2013, shareholder protection is found to be significant for both questions. However, the distinction between enabling and paternalistic rules then shows that this is mainly due to the enabling rules of shareholder protection. This finding is remarkable as lawmakers have focussed more on increasing paternalistic rules (see 1., above); it also follows that the existing literature misses this core distinction in the relationship between law and finance.

Table 1

Definitions of variables

Variable	Abbreviation	Description
Shareholder protection index	*SPI*	Legal rules that protect shareholders 10-variable index. Source: *CBR datasets* at https://www.cbr.cam.ac.uk/datasets/
Enabling shareholder protection	*SPIE*	Type of legal rules that give shareholders rights to do something (e. g, the right to appoint a proxy, the ability to file a claim) but leave it to shareholders themselves to decide whether or not to make use of such rights. Constructed as sub-index of the SPI. Available for the period 1990-2012. Source: *CBR datasets* and *Katelouzou and Siems 2015.*
Paternalistic shareholder protection	*SPIP*	Type of legal rules that aim to protect shareholders in all circumstances. Constructed as sub-index of the SPI. Available for the period 1990-2012. Source: *CBR datasets* and *Katelouzou and Siems 2015.*
Cross-border mergers and acquisitions	*CBMA*	Sum of the number of completed cross-border merger and acquisition deals in a country. Available for the period 1997 to 2012. Source: *Zephyr Bureau van Dijk*
Democracy polity	*DEM*	Composed of three interdependent elements; (1) the presence of institution and procedures through which citizens can express preference about alternative policy and leaders, (2) existence of institutionalized constraints on the exercise of power by the executive and (3) the guarantee of civil liberty to all citizens in their daily lives and the act of political participation. It is an eleven-point scale indicator ranging from 0 to 10. Available for the period 1996-2013. Source: *Polity IV Database, Centre for Systemic Peace* at http://www.systemicpeace.org/inscrdata.html
Electoral proportionality change	*ELECPROCH*	Electoral proportionality change as in Pagano and Volpin (2006).
Gross domestic product per capita	*GDPPC*	Gross domestic product per capita (calculated in constant US Dollars). Available for the period 1990-2013. Source: *World Development Indicators* at http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators
Domestic savings	*SAV*	Gross domestic savings as a percentage of GDP. Available for the period 1990-2013. Source: *World Development Indicators* at http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators
Domestic bank assets to GDP	*DBA*	Claims on domestic real nonfinancial sector by deposit money banks as a share of GDP for the period 1990-2013. Source: *Global Financial Indicators* at http://databank.worldbank.org/data/reports.aspx?source=global-financial-development
Legal infrastructure	*LINFRA*	*De facto* measure of the status of the country's legal infrastructure. Available for the period 1990-2013: Source: *Societal Infrastructure and Development Project* at https://clinecenter.illinois.edu/projects/research-themes/democracy-and-development/legal-infrastructures-project
Stock market capitalization to GDP	*MGDP*	Stock market capitalization as a percentage of GDP. Available for the period 1990-2012. Source: *World Development Indicators* at http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators

Table 2

Shareholder protection and stock market development using dynamic GMM

Variable	Model 1	Model 2	Model 3
SPI	0.437*		
	(0.257)		
SPIE		1.44*	
		(0.809)	
SPIP			0.346
			(0.23)
LINFRA	0.515	0.981*	0.262
	(0.36)	(0.581)	(0.195)
SPI *LINFRA	-0.084	-0.341	0.065
	(0.065)	(0.225)	(0.058)
DEM	0.0002	0.001	0.0006
	(0.003)	(0.002)	(0.003)
GDPC	0.622**	0.531*	0.667**
	(0.29)	(0.284)	(0.289)
DBA	-0.006**	0.005***	-0.004***
	(0.002)	(0.001)	(0.001)
SAV	-0.0006	-0.003	0
	(0.107)	(0.01)	(0.01)
Lagged MGDP	0.555***	0.519***	0.602***
	(0.049)	(0.064)	(0.043)
Year Dummies	YES	YES	YES
Wald X2	12084.75	5854	52300
	(0.000)***	(0.000)***	(0.000)***
1st order autocorrelation	-2.161	-2.33	-1.938
	(0.030)**	(0.019)**	(0.052)*
2nd order autocorrelation	1.34	1.397	1.281
	(0.169)	(0.162)	(0.199)
No. of observation	357	357	357

Notes: This table reports estimates of three specifications of Equation (1). In each specification, the dependent variable is market capitalization scaled by GDP. The explanatory variables of key interest are *SPI, SPIE* and *SPIP* as defined in Table 1. We define all other control variables in the notes to Table 1. For tractable interpretation, all the coefficients are reported as elasticity and the statistical significance is reported against 10% (*), 5% (**) and 1% (***) significance levels respectively.

Table 3

Convergence in shareholder protection using OLS regression with robust standard errors.

Variable	Model 1	Model 2	Model 3	Model 4
Panel (A)				
SPI_97	-0.571***	-0.566***	-0.619***	
	(-8.81)	(-8.02)	(-8.85)	
SPI				-0.275
				(-1.12)
ELECPROCH (1997-2012)		-0.063	-0.136	-0.156
		(-0.49)	(-0.8)	(-0.75)
CBMA			0.193	0.519**
			(-1.55)	(-2.25)
CBMA*SPI_97				-0.076
				(-1.47)
Constant	4.513***	4.494***	3.884***	2.470**
	(-13.16)	(-12.25)	(-8.28)	(-2.59)
R-squared	0.777	0.778	0.813	0.828
Number of Observations	30	30	30	30
Panel (B)				
SPIE_97	-0.365***	-0.356***	-0.443***	
	(-4.48)	(-4.26)	(-5.78)	
SPI				-0.047
				(-0.29)
ELECPROCH (1997-2012)		-0.185**	-0.284***	-0.029***
		(-2.37)	(-3.63)	(-3.69)
CBMA			0.186**	0.377***
			(-2.76)	(-2.86)
CBMA*SPIE_97				-0.086
				(-1.97*)
Constant	1.496***	1.474***	0.878***	0.047
	(-5.93)	(-5.73)	(-3.72)	(-0.11)
R-squared	0.556	0.58	0.73	0.76
Number of Observations	30	30	30	30
Panel (C)				
SPIP_97	-0.628***	-0.65***	-0.645***	
	(-7.50)	(-6.92)	(-5.79)	
SPI				-0.562
				(-0.84)
ELECPROCH (1997-2012)		0.124	0.13	0.125
		(-0.98)	(-1.06)	(-0.94)
CBMA			-0.013	0.023
			(-0.13)	(-0.09)
CBMA*SPIP_97				-0.018
				(-0.13)
Constant	2.596***	2.637***	2.688***	2.522**
	(-15.51)	(-14.43)	(-6.35)	(-2.21)
R-squared	0.614	0.619	0.62	0.62
Number of Observations	30	30	30	30

Notes: Dependent variable is change in shareholder protection from 1990-2013. The *t*-statistics, reported in parentheses, are based on double-clustered standard errors (clustering is done at the country and year level). For tractable interpretation, all the coefficients are reported as elasticity and the statistical significance is reported against 10% (*), 5% (**) and 1% (***) significance levels respectively.

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